



**87<sup>th</sup> Assignment:**

**Applied Networking Lab WS 23/24**

**Question : (11 Points): Testing bandwidth, CPU performance and mobility in Mininet**

**Objective:**

The mininet in a Software-Defined Networking (SDN) lab is to provide a platform for emulating and testing SDN environments in a controlled and scalable manner. Mininet allows users to create virtual networks on a single machine, enabling network developers, researchers, and students to experiment with SDN concepts, test network applications, and simulate various network scenarios.

**Question 1: (11 Points):**

**A:** Please do as directed. There are many custom topologies that are already present in mininet folder. The folder name is “**example**”. You have to run the following examples and produce there results. Support your answer with proper screenshots

- Run “Simple example of Mobility with Mininet”. The file name is **mobility.py**. Run it and produce screenshot.

- Specifically, you need to update the switch sequence in the loop and the new port number for each move. Take the screen shot of the every change in sequence result. (you can easily do it in the code, just read the code)

**B:** Run Test bandwidth (using iperf) on linear networks of varying size, using both kernel and user data-paths. Run it and produce screenshot. The file name is “**linearbandwidth.py**”.

- Add few host to the code and then also find the bandwidth for the new nodes. Take screenshots.

**C:** Run the code in file **cpu.py** and produce screenshot. The file name is "**cpu.py**".

- Discuss what this code is doing .
- How its helpful for network performance.

**D:** Run the code in file **controllers.py** and produce screenshot. The file name is "**controllers.py**".

- Run the code and try to connect this controller. You can connect any controller of user choice.

**Due Date: February, 18<sup>th</sup>, 2024, 10:00 am**

**Upload all relevant files (answers to theoretical questions as either PDF or .txt plus, .pkt, GNS-3 config files, etc.) to ISIS:**

<https://isis.tu-berlin.de/course/view.php?id=35211>

Put the names and Student ID numbers (Matrikelnummer) of **all** your group members on your solution!